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Environmental Illness In Children Costs \$76.6 Billion Annually

May 4th, 2011

by [Chris Fleming](#)
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Poor childhood health caused by environmental factors, such as air pollution and exposure to toxic chemicals, cost the United States \$76.6 billion in 2008, according to [a new study](#) in the May issue of *Health Affairs*. This price tag represents a dramatic increase, from 2.8 percent of total health care costs in 1997 to 3.5 percent in 2008, report study authors Leonardo Trasande of the Mount Sinai School of Medicine and Yinghua Liu of National Children's Study New York-Northern New Jersey Center.

The new study was published online today, along with three other Web First articles focusing on the environment and children's health, described below. The full May issue of *Health Affairs*, a thematic volume on environmental health, will be published on the *Health Affairs* Web site later this week. Funding for this issue was provided by The Kresge Foundation.

Trasande and Liu focused on the cost of lead poisoning, childhood cancer and chronic conditions, including asthma, intellectual disability, autism and attention deficit disorders — conditions that are linked to environmental toxins and pollutants in the air, food, water, and soil, as well as in homes and neighborhoods. "Left unchecked, these preventable environmental factors will continue to harm the health of our children and push up health care costs," Trasande said. "By updating environmental regulations and laws aimed at protecting the public's health, we can reduce the toll taken by such factors on children's health and the economy."

Trasande and Liu used recent data to estimate the number of environmentally induced conditions in children and then calculated the annual cost for direct medical care and indirect costs, such as lost productivity resulting from parents' caring for sick children. Their study updates an analysis of 1997 data that documented \$54.9 billion in annual costs due to U.S. childhood diseases connected to the environment.

In comparing the two studies, Trasande and Liu found that diminished exposure to lead and reductions in costs for asthma care were offset by diseases newly identified as environmentally induced, including attention deficit disorder, and the added burden of mercury exposure. This toxic metal, from contaminated fish and coal-fired power plants, can harm the developing brain and is associated with intellectual disability.

Key findings from the study:

- Lead poisoning cost \$50.9 billion.
- Autism cost \$7.9 billion.
- Intellectual disability cost \$5.4 billion.
- Exposure to mercury (methyl mercury) cost \$5.1 billion.
- Attention deficit hyperactivity disorder cost \$5.0 billion.
- Asthma cost \$2.2 billion.
- Childhood cancer cost \$95.0 million.

Trasande and Liu call for further reductions in lead-based paint hazards to protect children from lead poisoning, which can severely affect mental and physical development, and tighter air quality standards



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to curb mercury emissions and reduce particulates that can trigger asthma. They also call for testing of new chemicals and substances already in use to ensure they pose no risk to human health.

Several other papers in the May issue explore environmental health challenges for children, including the following:

Children's vulnerability to toxic chemicals. A landmark 1993 study brought to the forefront the fact that children are far more sensitive than adults to toxic chemicals in the environment, [write Philip Landrigan of the Mount Sinai School of Medicine and Lynn Goldman of the George Washington University](#). They analyzed existing literature on toxicity in children and concluded that even minute exposures to toxic chemicals — at levels that would have no impact on an adults — can harm children, leading to diseases like asthma, mental retardation, and possibly cancer. To reduce this burden of preventable disease, Landrigan and Goldman recommend including a legally mandated requirement to test the chemicals already on the market for toxicity and stepped-up research to both identify new toxins and document environmentally induced diseases in children.

Air pollution and its impact on health and academic achievement. [Perry Sheffield and coauthors at the Mount Sinai School of Medicine](#) examined the little-studied relationship between fine particulates or pollutants in the air and the cost of bronchiolitis, a type of lung infection in children. They discovered that children exposed to such pollutants were more likely to have higher health care costs from treating this respiratory illness. If regulators took steps to reduce fine particulate levels 7 percent below the current standard, the nation would save an estimated \$15 million a year in health care costs, the researchers note.

Exposure to air pollution during important stages of development. Such exposure can lead to long-lasting health and academic problems for children, [write Paul Mohai, Byong-Suk Kweon, and colleagues at the University of Michigan](#). They examined the extent of air pollution from industrial sources near public schools, finding that schools located in areas with the highest air pollution had the lowest attendance rates (a marker for poor health) and the highest proportion of students failing to meet state educational standards. The authors call for increased attention to the air quality in neighborhoods where schools are to be located.

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President Obama's speech in support of his proposed American Jobs Act promised to increase jobs through improving US infrastructures, including schools, without sacrificing worker safety. Obama also promised to fix the Social Security System. There are two potentially fatal flaws in both proposals that are tied by subject matter to this article, ""Environmental Illness In Children Costs \$76.6 Billion Annually."

U.S. Workers already have safety standards and regulations to insure their safety through OSHA and NIOSH. In stark contrast, United States children have none. It is poor government policy that does not acknowledge the U.S. EPA findings that children, whose organs and brains are still forming, are more vulnerable to harm and injury from environmental and chemical hazards.

Everyday, children are exposed to and harmed by nearby renovation, construction, and maintenance from unsafe practices in manufacture, storage, transport, on-site storage of products as well as fumes, off-gassing, and contact with unsafe products and poorly maintained structures. Children spend most of their time in schools where they are injured by poor indoor air environment, mold, outdoor pollution, fumes, off-gassing, over-spray and unsafe practices and products used in renovation and construction. Demolition can release mold spores and asbestos. One third of the cleaners used in schools are cancer causing. Over half of U.S. schools are deemed by the EPA as unsafe for children.

In 1985, I was seriously and permanently injured while teaching in Long Beach School District in Mississippi. High fuel prices promoted national policies encouraging energy efficiency and a promise to fix our schools. I witnessed the tragedy of many children who also became very sick from the spray on foam roofing insulation and sealant. I became too sick to work, and lost my job,

Few realize that occupants of a building: teachers, children, and other occupants of buildings and schools, are non-workers and therefore as bystanders are not covered by safety standards and regulations. Even fewer realize that "safe" applies to the effect on a healthy, grown, male, worker. Children and bystanders are not provide protection. Worse, school officials who make decisions that lead to environmental or chemical harm to teachers and children are either protected from accountability or are not made accountable for health costs.

The second flaw is in President Obama's promise to fix the Social Security System. The strain on the Social Security system is not just from those drawing benefits at 65, it is also from those who have been disabled, many by environmental and chemical hazards as a child. The children of those who are disabled by poor safety and lack of safety standards and regulations for children also draw on the Social Security Disability System. For the disabled, SSD is barely enough to cover co payment prescription and medical costs and often leads to medicare or burdens on other social programs.

Culpable companies should be paying for the disabilities they cause, not the Social Security program, nor other social programs. Perhaps Social Security can bolstered by an additional tax on insurance companies who insure companies with an unsafe record and fines for businesses and corporations with a record for unsafe practices.

Writer Chris Fleming points out that in 2008, the \$76.6 billion price tag for "poor childhood health caused by environmental factors, such as air pollution and exposure to toxic chemicals. . .represents a dramatic increase. President Obama's promise of more jobs does not have to mean a creating a poor environment for workers and children, nor does the explosion of new untested chemicals on the market have to sentence many children, particularly the poor and racial minorities, to a life time of pain, sickness, and death and result in doom for the Social Security System.

President Obama's proposals flaws do not have to be fatal. Child safety standards and regulations could and should be provided to school and business decision makers, contractors, and others, with sufficient education and effective oversight. Protecting children from environmental and chemical hazards, especially at school, should be a priority and requisite to creating jobs and to an imperative to saving the Social Security System.

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